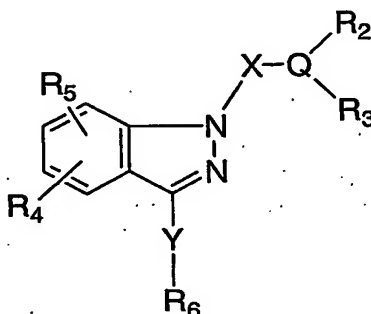


WHAT IS CLAIMED IS:

1. A compound of the structural formula I:



Formula I

or a pharmaceutically acceptable salt, enantiomer, diastereomer or mixture thereof:
wherein,

R represents hydrogen, or C₁₋₆ alkyl;

X represents -(CHR₇)_p-, or -(CHR₇)_pCO-;

Y represents -CO(CH₂)_n-, CH₂-, or -CH(OR)-;

Q represents N, or O, wherein R₂ is absent when Q is O;

R_w represents H, C₁₋₆ alkyl, -C(O)C₁₋₆ alkyl, -C(O)OC₁₋₆ alkyl, -SO₂N(R)₂, -SO₂C₁₋₆ alkyl, -SO₂C₆₋₁₀ aryl, NO₂, CN or -CON(R)₂;

R₂ represents hydrogen, C₁₋₁₀ alkyl, OH, C₂₋₆ alkenyl, C₁₋₆ alkylSR, -(CH₂)_nO(CH₂)_mOR, -(CH₂)_nC₁₋₆ alkoxy, -(CH₂)_nC₃₋₈ cycloalkyl, -(CH₂)_nC₃₋₁₀ heterocyclyl, -N(R)₂, -COOR, or -(CH₂)_nC₆₋₁₀ aryl, said alkyl, heterocyclyl, or aryl optionally substituted with 1-3 groups selected from R^a;

R₃ represents hydrogen, C₁₋₁₀ alkyl, -(CH₂)_nC₃₋₈ cycloalkyl, -(CH₂)_nC₃₋₁₀ heterocyclyl, -(CH₂)_nCOOR, -(CH₂)_nC₆₋₁₀ aryl, -(CH₂)_nNHR₈, -(CH₂)_nN(R)₂, -(CH₂)_nN(R₈)₂, -(CH₂)_nNHCOOR, -(CH₂)_nN(R₈)CO₂R, -(CH₂)_nN(R₈)COR, -(CH₂)_nNHCO₂R, -(CH₂)_nCONH(R₈), aryl, -(CH₂)_nC₁₋₆ alkoxy, CF₃, -(CH₂)_nSO₂R, -(CH₂)_nSO₂N(R)₂, -(CH₂)_nCON(R)₂, -(CH₂)_nCONHC(R)₃, -(CH₂)_nCONHC(R)₂CO₂R, -(CH₂)_nCOR₈, nitro, cyano or halogen, said alkyl, alkoxy, heterocyclyl, or aryl optionally substituted with 1-3 groups of R^a;

or, when Q is N, R₂ and R₃ taken together with the intervening N atom form a 4-10 membered heterocyclic carbon ring optionally interrupted by 1-2 atoms of O, S, C(O) or NR, and optionally having 1-4 double bonds, and optionally substituted by 1-3 groups selected from R^a;

5

R₄ and R₅ independently represent hydrogen, C₁₋₆ alkoxy, OH, C₁₋₆ alkyl, SO_qC₁₋₆ alkyl, COC₁₋₆ alkyl, COOR, SO₃H, -O(CH₂)_nN(R)₂, -O(CH₂)_nCO₂R, -OPO(OH)₂, CF₃, OCF₃, -N(R)₂, nitro, cyano, C₁₋₆ alkylamino, or halogen; and

10 R₆ represents hydrogen, C₁₋₁₀ alkyl, -(CH₂)_nC₆₋₁₀ aryl, NR_cR_d, -NR(CH₂)_nC₆₋₁₀ aryl, -N((CH₂)_nC₆₋₁₀ aryl)₂, -(CH₂)_nC₃₋₁₀ heterocyclyl, -NR(CH₂)_nC₃₋₁₀ heterocyclyl, -N((CH₂)_nC₃₋₁₀ heterocyclyl)₂, (C₆₋₁₀ aryl)O-, -(CH₂)_nC₃₋₈ cycloalkyl, -COOR, -C(O)CO₂R, said aryl, heterocyclyl and alkyl optionally substituted with 1-3 groups selected from R^a, wherein the R^a(s) can be attached to any carbon atom or heteroatom selected from N and S;

15

R_c and R_d independently represent H, C₁₋₆ alkyl, C₂₋₆ alkenyl, C₁₋₆ alkylSR, -(CH₂)_nO(CH₂)_mOR, -(CH₂)_nC₁₋₆ alkoxy, -(CH₂)_nC₃₋₈ cycloalkyl;

20

or R_c and R_d taken together with the intervening N atom form a 4-10 membered heterocyclic carbon ring optionally interrupted by 1-2 atoms of O, S, C(O) or NR, and optionally having 1-4 double bonds, and optionally substituted by 1-3 groups selected from R^a;

R₇ represents hydrogen, C₁₋₆ alkyl, -(CH₂)_nCOOR or -(CH₂)_nN(R)₂,

25 R₈ represents -(CH₂)_nC₃₋₈ cycloalkyl, -(CH₂)_n 3-10 heterocyclyl, C₁₋₆ alkoxy - or (CH₂)_nC₆₋₁₀ aryl said heterocyclyl, or aryl optionally substituted with 1-3 groups selected from R^a;

30

R^a represents F, Cl, Br, I, CF₃, N(R)₂, NO₂, CN, -O-, -COR₈, -CONHR₈, -CON(R₈)₂, -O(CH₂)_nCOOR, -NH(CH₂)_nOR, -COOR, -OCF₃, CF₂CH₂OR, -NHCOR, -SO₂R, -SO₂NR₂, -SR, (C₁-C₆ alkyl)O-, -(CH₂)_nO(CH₂)_mOR, -O(CH₂)_nO(CH₂)_mOR, -(CH₂)_nC₁₋₆ alkoxy, (aryl)O-, -(CH₂)_nOH, (C₁-C₆ alkyl)S(O)_m-, H₂N-C(NH)-, (C₁-C₆ alkyl)C(O)-, (C₁-C₆ alkyl)OC(O)NH-, -(C₁-C₆ alkyl)NR_w(CH₂)_nC₃₋₁₀ heterocyclyl-R_w, -(C₁-C₆ alkyl)O(CH₂)_nC₃₋₁₀ heterocyclyl-R_w, -(C₁-C₆ alkyl)S(CH₂)_nC₃₋₁₀ heterocyclyl-R_w, -(C₁-C₆ alkyl)-C₃₋₁₀ heterocyclyl-R_w, -(CH₂)_n-Z¹-C(=Z²)N(R)₂, -(C₂₋₆ alkenyl)NR_w(CH₂)_nC₃₋₁₀ heterocyclyl-R_w,

-(C₂₋₆ alkenyl)O(CH₂)_nC₃₋₁₀ heterocyclyl-R_w, -(C₂₋₆ alkenyl)S(CH₂)_nC₃₋₁₀ heterocyclyl-R_w,
 -(C₂₋₆ alkenyl)-C₃₋₁₀ heterocyclyl-R_w, -(C₂₋₆ alkenyl)-Z¹-C(=Z²)N(R)₂, -(CH₂)_nSO₂R, -
 (CH₂)_nSO₃H, -(CH₂)_nPO(OR)₂, C₃₋₁₀cycloalkyl, C₆₋₁₀ aryl, C₃₋₁₀ heterocyclyl, C₂₋₆
 alkenyl, and C₁-C₁₀ alkyl, said alkyl, alkenyl, alkoxy, heterocyclyl and aryl optionally
 5 substituted with 1-3 groups selected from C₁-C₆ alkyl, halogen, CN, NO₂, -(CH₂)_nOH,
 CON(R)₂ and COOR;

Z¹ and Z² independently represents NR_w, O, CH₂, or S;

m is 0-3;

10 n is 0-3;

p is 0-3 and

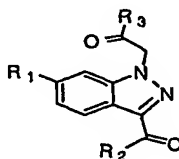
q is 0-2.


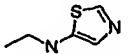
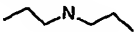

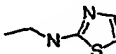
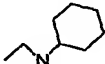
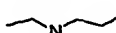
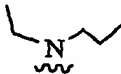
2. A compound according to claim 1 wherein R₆ is (CH₂)_nC₆₋₁₀ aryl,
 (CH₂)_nC₃₋₁₀ heterocyclyl, NR_cR_d or (CH₂)_nC₃₋₈ cycloalkyl, said aryl, heterocyclyl and alkyl
 15 optionally substituted with 1 to 3 groups of R^a.

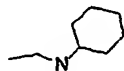
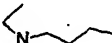


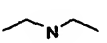
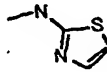
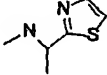
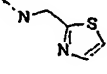
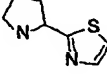

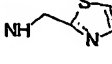
3. A compound according to claim 1 wherein Y is -CO(CH₂)_n, Q is N, R₂ is
 hydrogen, C₁₋₁₀ alkyl or C₁₋₆ alkylOH, R₃ is C₁₋₁₀ alkyl or (CH₂)_nC₃₋₁₀ heterocyclyl, and X is
 -(CHR₇)_pCO-, and p is 1-3 said heterocyclyl optionally substituted with 1 to 3 groups of R^a.

4. A compound of Table 1 through 4 which is:

Table 1



R1	R2	R3
H	Phenyl	
H	Phenyl	
H	Phenyl	
H	Phenyl	
H	Phenyl	
H	Phenyl	
H	Phenyl	
OMe	Phenyl	

R1	R2	R3
OMe	Phenyl	
OMe	Phenyl	
OMe	Phenyl	
OMe	Phenyl	
OMe	Phenyl	
OMe	Phenyl	
OMe	Phenyl	
OMe	Phenyl	
OMe	Phenyl	
OMe	Phenyl	
OMe	Phenyl	

Tabel 1 Cont'd

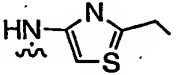
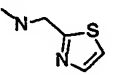
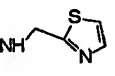



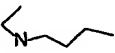
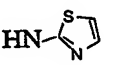
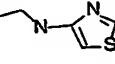
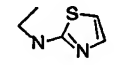
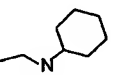
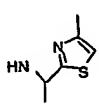

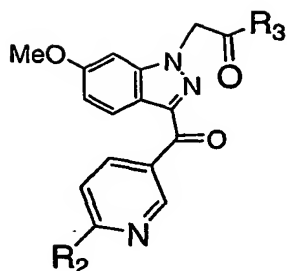
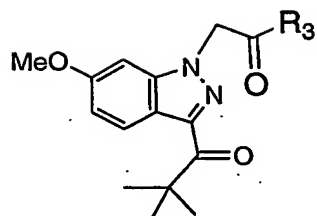
OMe	Isopropyl	
OMe	Isopropyl	
OMe	Isopropyl	
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OMe	Isopropyl	

Table 2



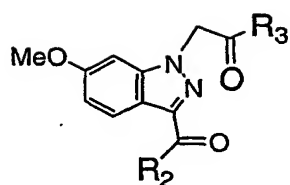
R2	R3	R2	R3
$\text{HOCH}_2\text{OCH}_2$	$\text{N}(\text{CH}_2\text{CH}_2)_2$	$\text{F}_2\text{C}(\text{OH})\text{CH}_2$	$\text{N}(\text{CH}_2\text{CH}_2)_2$
$\text{HOCH}_2\text{OCH}_2$	$\text{N}(\text{CH}_2\text{CH}_2)_2$	$\text{F}_2\text{C}(\text{OH})\text{CH}_2$	$\text{N}(\text{CH}_2\text{CH}_2)_2$
$\text{HOCH}_2\text{OCH}_2$	$\text{N}(\text{CH}_2\text{CH}_2)_2$	$\text{F}_2\text{C}(\text{OH})\text{CH}_2$	$\text{N}(\text{CH}_2\text{CH}_2)_2$
$\text{HOCH}_2\text{OCH}_2$	$\text{N}(\text{CH}_2\text{CH}_2)_2$	$\text{F}_2\text{C}(\text{OH})\text{CH}_2$	$\text{N}(\text{CH}_2\text{CH}_2)_2$
$\text{HOCH}_2\text{OCH}_2$	$\text{N}(\text{CH}_2\text{CH}_2)_2$	HOCH_2CH_2	$\text{N}(\text{CH}_2\text{CH}_2)_2$
$\text{HOCH}_2\text{OCH}_2$	$\text{N}(\text{CH}_2\text{CH}_2)_2$	HOCH_2CH_2	$\text{N}(\text{CH}_2\text{CH}_2)_2$
$\text{HOCH}_2\text{OCH}_2$	$\text{N}(\text{CH}_2\text{CH}_2)_2$	HOCH_2CH_2	$\text{N}(\text{CH}_2\text{CH}_2)_2$
$\text{HOCH}_2\text{OCH}_2$	$\text{N}(\text{CH}_2\text{CH}_2)_2$	HOCH_2CH_2	$\text{N}(\text{CH}_2\text{CH}_2)_2$
$\text{F}_2\text{C}(\text{OH})\text{CH}_2$	$\text{N}(\text{CH}_2\text{CH}_2)_2$		

Table 3



R3	R3	R3

Table 4



R2	R3	R2	R3

or a pharmaceutically acceptable salt, enantiomer, diastereomer or mixture thereof.

5. A method for treating ocular hypertension or glaucoma comprising administration to a patient in need of such treatment a therapeutically effective amount of a compound of claim 1.

5 6. A method for treating macular edema, macular degeneration, increasing retinal and optic nerve head blood velocity, increasing retinal and optic nerve oxygen tension, and/or a neuroprotective effect comprising administration to a patient in need of such treatment a pharmaceutically effective amount of a compound of claim 1; or a pharmaceutically acceptable salt, enantiomer, diastereomer or mixture thereof.

10 7. A method of preventing repolarization or hyperpolarization of a mammalian cell containing potassium channel or a method of treating Alzheimer's Disease, depression, cognitive disorders, and/or arrhythmia disorders in a patient in need thereof comprising administering a pharmaceutically effective amount of a compound according to
15 Claim 1, or a pharmaceutically acceptable salt, enantiomer, diastereomer or mixture thereof.

8. A method of treating diabetes in a patient in need thereof comprising administering a pharmaceutically effective amount of a compound according to claim 1, or a pharmaceutically acceptable salt, enantiomer, diastereomer or mixture thereof.

20 9. A composition comprising a compound of formula I of claim 1 and a pharmaceutically acceptable carrier.

25 10. The composition according to Claim 9 wherein the compound of formula I is applied as a topical formulation, said topical formulation administered as a solution or suspension and optionally containing xanthan gum or gellan gum.

30 11. A composition according to claim 9 wherein an active ingredient belonging to the group consisting of: beta-adrenergic blocking agent, parasympatho-mimetic agent, sympathomimetic agent, carbonic anhydrase inhibitor, EP4 agonist, a prostaglandin or derivative thereof, hypotensive lipid, neuroprotectant, and/or 5-HT₂ receptor agonist is optionally added.

12. A composition according to claim 11 wherein the beta-adrenergic blocking agent is timolol, betaxolol, levobetaxolol, carteolol, or levobunolol; the parasympathomimetic agent is pilocarpine; the sympathomimetic agent is epinephrine, brimonidine, iopidine, clonidine, or para-aminoclonidine, the carbonic anhydrase inhibitor is dorzolamide, acetazolamide, metazolamide or brinzolamide; the prostaglandin is latanoprost, travaprost, unoprostone, rescala, or S1033, the hypotensive lipid is lumigan, the neuroprotectant is eliprodil, R-eliprodil or memantine; and the 5-HT₂ receptor agonist is 1-(2-aminopropyl)-3-methyl-1H-imidazol-6-ol fumarate or 2-(3-chloro-6-methoxy-indazol-1-yl)-1-methyl-ethylamine.